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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/584,351

06/23/2006

Hideshi Onishi

512-46311X00

3349

20457

7590

11/17/2008

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ARLINGTON, VA 22209-3873

EXAMINER

FREEMAN, JOHN D

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

11/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/584,351

Applicant(s)

ONISHI, HIDESHI

Examiner

John Freeman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-2, 4-6, and 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miharu et al. (WO 96/18681) in view of Ninomiya et al. (US 6,184,288) and Saxton (US 5,032,632).
3. Regarding claims 1-2:
4. Miharu et al. (hereafter Miharu) disclose a thermoplastic resin composition comprising EVOH, an ionomer, and a polyamide (p3 In 2-8). The amount of polyamide ranges from 2 to 50 parts by weight relative to 100 parts by weight of EVOH. The thermoplastic can be used in a laminate with other layers including layers of polyamide and polyolefin (p9 In 30-p10 In 25). Example film thicknesses include a 50 μ m (p11 In 33). Furthermore, the presently claimed thicknesses are merely dependent on the intended use for the film, and were well within the skill level of the ordinary artisan.
5. Miharu is silent with regard to a ratio of alkaline metal salt to alkaline earth metal salt, and a phosphorous compound.
6. Ninomiya et al. (hereafter Ninomiya) disclose ethylene-vinyl alcohol (EVOH) pellets and films made from said pellets (col 1 In 7-12). The EVOH pellets exhibit improved moldability and provide moldings with good appearance and quality and good stretchability (col 2 In 1-6). Ninomiya saponifies ethylene-vinyl acetate to create the EVOH (col 2 In 57-63). The pellets contain a boron compound (c1), an alkaline metal acetate (c3), an alkaline earth metal acetate (c4), and a phosphoric acid compound (c5) (col 2 In 17-23). Ninomiya teaches the use of antioxidant compounds in the pellets (col 7 In 24).
7. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use the EVOH pellets as taught by Ninomiya in the thermoplastic composition taught by Miharu to provide good moldability and stretchability, as well as resultant molding having a good appearance.
8. Both Miharu and Ninomiya are silent with regard to a hindered phenol antioxidant.

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9. Such antioxidants were well-known in the art at the time of the invention. For example, Saxton teaches an EVOH polymer having metal salts and a hindered phenolic antioxidant (col 2 In 61-65, col 3 In 1-2).
10. At the time of the invention, it would have been obvious to one of ordinary skill in the art to use a hindered phenolic antioxidant in the composition taught by the combination of Miharv in view of Ninomiya to improve the composition's resistance to oxidation.
11. Regarding the metal salts, Ninomiya mentions sodium acetate as an alkali metal salt (col 5 In 5-9). The pellet contains 0.0001 to 0.1 part by weight of alkali salt (c3) and 0.0001 to 0.1 part by weight of alkaline earth metal salt (c4). As such, the amounts used result in a range of ratios that overlap with Applicant's range.
12. Ninomiya reports the weight of phosphoric acid compound (c5) in terms of weight, and not parts-per-million as Applicant describes. The examiner takes the position that Ninomiya's disclosure of 0.0005 to 0.1 parts by weight of phosphoric acid (col 4 In 33) overlaps with the range claimed by Applicant because Ninomiya's range is so broad. Furthermore, the range disclosed by Applicant would have been made obvious to one of ordinary skill in the art through routine experimentation.
13. Ninomiya is silent with regard to the hindered phenol antioxidant content as claimed by Applicant. Saxton reports the weight of the hindered phenol antioxidant in terms of weight, and not parts-per-million as Applicant describes. The examiner takes the position that Saxton's disclosure of 0.05 to 0.5 weight percent (col 3 In 1-2) overlaps with the range claimed by Applicant. Furthermore, the range disclosed by Applicant would have been made obvious to one of ordinary skill in the art through routine experimentation.
14. With respect to the overlapping ranges discussed in paragraphs 32-34, as set forth in MPEP 2144.05, in the case where the claimed range "overlap or lie inside ranges disclosed by the prior art", a *prima facie* case of obviousness exists, In re Wertheim, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); In re Woodruff, 919 F.2d 1575, 16 USPQ2d 1934 (Fed. Cir. 1990).
15. Regarding claims 4 and 11:
16. As mentioned, Ninomiya's EVOH contains a boron compound (c1).

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17. Regarding claims 5-6, 12-16:

18. Polyolefin and polyamide layers provide properties to laminates well-known in the art. For example, polyolefin layers are moisture barriers, and polyamide layers are oxygen barriers. Therefore at the time of the invention, one of ordinary skill would arrive at a structure wherein the polyolefin layer is the innermost layer, and the polyamide layer is the outermost layer in the laminate through routine experimentation depending on the end use. For example, in food packaging, a moisture barrier may be needed for a product, and therefore be located on the innermost layer next to said product, while an oxygen barrier is needed to keep the product from spoiling, and is located on the outer portion of the package.

19. Claims 3 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miharu et al. (WO 96/18681) in view of Ninomiya et al. (US 6,184,288) and Saxton (US 5,032,632) as applied to claims 1-2, 4-6, and 11-16 above, and further in view of Tachibana et al. (US 6,169,161).

20. Miharu in view of Ninomiya and Saxton is previously explained. Each reference is silent with respect to an end-capped polyamide.

21. The method of end-capping a polyamide was well-known in the art at the time of the invention. End-capping changes the terminal groups, as evidenced by Tachibana et al. (col 7 ln 31-41). The terminal group concentrations affect the overall properties of the polyamide polymer (col 8 ln 14-40).

22. Therefore at the time of the invention, it would have been obvious to one of ordinary skill in the art to use an end-capped polyamide depending on desired properties, in the combined invention of Miharu in view of Ninomiya and Saxton.

Response to Arguments

23. Applicant's arguments filed 29 July 2008 have been fully considered but they are not persuasive.

24. Applicant submits Ninomiya's "description is not the mixture of EVOH and polyamides but the copolymer of them" (p9). The examiner withdraws the rejection under 35 U.S.C. 103(a) over Ninomiya in view of Saxton because the references are silent with regard to the amount of polyamide used as presently claimed. The examiner notes the present claims do not recite "a mixture", but only require EVOH and polyamide. The examiner further provides Miharu, which describes a mixture of EVOH and polyamide, as discussed in the rejections above.

25. Applicant states "there is not described in [Ninomiya] that the layer contains a hindered phenol antioxidant as disclosed and claimed by Applicant" (p9). The examiner provides Saxton as an exemplary reference to show that such antioxidants were well-known in the art at the time of the invention. Therefore, Miharu in view of Ninomiya and Saxton provides an EVOH composition having a hindered phenol antioxidant to improve the oxidation resistance of the composition.

26. Applicant argues Saxton "does not describe using a sodium salt and a divalent metal salt together or contain a phosphorous compound as disclosed and claimed by Applicant" (p9). However, note that while Saxton does not disclose all the features of the present claimed invention, Saxton is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely, well-known hindered phenol antioxidants used with EVOH compositions, and in combination with the primary reference, discloses the presently claimed invention.

27. Similarly Applicant argues "there is no description in [Tachibana] about EVOH" as a material to blend with polyamide, and further "no description of the specified amount of the compound agent" (p9-10). However, note that while Tachibana do not disclose all the features of the present claimed invention, Tachibana is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, *In re Nievelt*, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), *In re Keller* 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference

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teaches a certain concept, namely, end-capped polyamides, and in combination with the primary reference, discloses the presently claimed invention.

Conclusion

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Degrassi '765 and Degrassi '715 both disclose multilayer films comprising an EVOH/polyamide blend.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Freeman whose telephone number is (571)270-3469. The examiner can normally be reached on Monday-Friday 7:30-5:00PM EST (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on (571)272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner
Art Unit 1794

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